

## REMARKS

The Office Action dated October 20, 2008 has been received and carefully noted. The above amendments and following remarks are being submitted as a full and complete response thereto.

Claims 2-3 are pending in this application. By this amendment, Claim 2 is amended. Support for the amendments can be found in the specification at, for example, page 13, lines 10-13 and Figs. 1 and 4. No new matter has been added. Reconsideration of the rejection of the claims is respectfully requested.

The Office Action withdraws the allowability of Claim 2 in view of new ground of rejection. In the Office Action, Claims 2-3 are rejected under 35 U.S.C. 103(a) over Caren et al. (U.S. Patent No. 6,029,442) in light of Evans et al. (U.S. Patent No. 6,479,023). The Office Action alleged that Caren's method inherently comprises the step of heating the exhaust gas, whether heating is from the combustion of fuel or during the generation of the plasma based on the description in col. 12, lines 54-67 of Caren's specification. It is noted that Claim 2 has been amended. To the extent that the grounds for rejection are still applicable to the currently pending claims, they are respectfully traversed.

Claim 2, as amended, recites heating, by a heater, the exhaust gas at a temperature greater than 70°C prior to the exhausted gas being treated in a plasma generator. None of Caren and Evan teaches or suggest this feature.

Applicants respectfully submit that the feature "heating, by a heater, the exhaust gas at a temperature greater than 70°C prior to the exhausted gas being treated in a plasma generator" is effective for generating plasma in the exhaust gas

discharged from the lean burn engine. When the exhaust gas has a low temperature, a large amount of energy is required for generating the plasma through breakage of an insulated state of the space. By heating and raising the temperature of the exhaust gas that flows into a plasma generator by using a heater, the amount of energy required for generating plasma can be reduced advantageously.

The descriptions in Col. 12, line 50 to col. 13, line 14 of Caren merely specify when to replace the corona discharge device. According to Caren, the electromagnetic discharge device must meet automotive electromagnetic interference (EMI) requirements, be readily replaceable, and be capable of withstanding thousands of thermal transients of about 800 °C during start-up and cool-down of the engine, as well as several million smaller thermal transients where the change in temperature is on the order of about 200 °C. Such description has nothing to do with “heating, by a heater, the exhaust gas at a temperature greater than 70°C prior to the exhausted gas being treated in a catalytic reactor, as recited in amended Claim 1. Indeed, the above EMI requirement is a regulation for safety that applies most of automobiles. It requires that the discharge device *withstands* thousands of thermal *transients* during cool down and start up of the engine. Such thermal transients do not contribute the heating of the exhaust gas generated from the lean burn engine. According to Caren, the discharge device can be installed inside the catalyst or remotely from the catalyst. In any case, Caren fails to teach heating the exhaust gas prior to the exhaust gas being treated in a plasma generator.

Evans fails to cure deficiencies in Caren in disclosing or rendering obvious heating, by a heater, the exhaust gas at a temperature greater than 70°C prior to the

exhaust gas being treated in a plasma generator, as recited in amended independent Claim 2.

For at least these reasons, a combination of the applied references fails to arrive at the subject matter of amended Claim 2. Thus, amended Claim 2 is allowable over the applied references. Furthermore, Claim 3, at least for its dependence on allowance Claim 2, and for its further limitations, is also patentable over a combination of the applied references. Thus, withdrawal of the rejection of the claims under 35 U.S.C. § 103(a) is respectfully requested.


### **Conclusion**

Applicant respectfully submits that this application is in condition for allowance and such action is earnestly solicited. Should the Examiner determine that any further action is necessary to place this application into better form, the Examiner is encouraged to telephone the undersigned representative at the number listed below.

In the event this paper is not considered to be timely filed, the Applicants hereby petition for an appropriate extension of time. Any fees for such an extension,

together with any additional fees that may be due with respect to this paper,  
may be charged to counsel's Deposit Account No. 01-2300, **referencing Attorney**  
**Dkt. No. 107348-00389.**

Respectfully submitted,



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